



The Reverchon Naturalist

Recognizing the work of French botanist Julien Reverchon, who began collecting throughout the North-Central Texas area in 1876, and all the botanists/naturalists who have followed ...

Tasajillo (*Opuntia leptocaulis*)

*Story by Alexandra Smith
NRCS Soil Conservationist
Albany, Texas*

Tasajillo is a member of the Cactaceae family and can be commonly found throughout most of Texas in all vegetative regions, except for region 1-the Piney woods; and Region 2- the Post Oak Savannah. It typically grows in sandy loam or clay loam soils and is often found in association with Honey mesquite. It is a perennial, warm season plant that is native to Texas.

Tasajillo reproduces through seeds, that are a valuable source of food for wildlife, particularly birds. Because of this preference, frequently one can find stands of this cactus along fence lines or under trees, where it has been deposited by the birds that have consumed it.

If so desired, one could also propagate new plants by making cuttings of the woody material that make up the plant. In this situation, one would want to let the cuttings callous over before planting them. This process also occurs naturally as joints are knocked off by wind, animals or man, and begin to grow on their own when making contact with the soil.

Tasajillo is easily recognized by its overall brushy appearance and short, cylindrical, segmented stems. It does not usually exceed five feet in height.

As new segments of tasajillo emerge, tiny leaves can be spotted at each cluster of spines. Tiny, green flowers appear producing small, green fruits that will turn red as they ripen. This plant is covered in $\frac{3}{4}$ inch to 2-inch long slender, white spines.

Tasajillo is extremely drought tolerant, prefers full sun, and is usually considered an undesirable plant. It is known by many names, including: Christmas cactus, Jumping cactus, Pencil cactus, and Slender-stem cactus.

Deer, turkey, quail, among other birds and small mammals are known eat the ripe berries that this plant produces, and occasionally deer browse the new green growth. There are no known medicinal uses of tasajillo, but the fruits are edible if one wished to go to the trouble. Extreme caution should be used when handling this plant because of its spines, which can be difficult to remove from the skin.



Tasajillo is easily recognized by its overall brushy appearance with short, cylindrical, segmented stems. (Photos courtesy of Alexandra Smith, USDA-NRCS)





By Ricky Linex
NRCS Wildlife Biologist
Weatherford, Texas

All Hands on Deck; Man the Battle Stations

Though the title has a naval slant, no slight to the military is intended when I say we all have to be on deck, eyes peering into the distance looking for danger that is present. Except in our case we must prepare to do battle with invasive weeds upon the land. The past decade has seen a spread of many we now know and recognize even at 70 miles per hour. Thistles are the battleships of this invading force, with names like scotch thistle, Malta star-thistle, and even blessed milk-thistle. These plants can reach six feet in height and width, and cover many square feet of ground. Not only do livestock and wildlife avoid eating these thistles, they won't even graze close to the sharp prickly leaves. In mid-April I saw a patch of blessed milk-thistle in Hamilton County covering about two acres. Just one plant can produce close to a thousand seeds, so imagine the production from two acres of thistles. Scotch thistle and Malta star-thistle are often seen along roadsides, and recently disturbed areas such as construction sites where vehicles and equipment serve as a mode of transportation to spread the seeds. Mowing the roadsides also spreads the seeds; think about the heavy concentration of seeds whenever and wherever the mower deck is cleaned of dried seeds, leaves and dust. Blessed milk-thistle is more of a Rambler, getting off the roadsides and visiting anywhere equipment is stored, old livestock corrals and small pens that may only be used infrequently. The white stripes in the leaves of blessed milk thistle give a zebra stripe appearance and makes confirming identification very easy. The heavy spine-like prickles surrounding the flower heads gives seemingly un-needed protection to ensure the seeds are allowed to mature un-molested.

The enemies we can't see, much like the U boats from WW II, are the seeds that were brought in with donated hay to feed livestock during the drought of 2011. These plants are now just beginning to have good moisture to germinate and grow. It should be on everyone's radar to go, and look at locations where this hay was fed. This hay came from points unknown across the state line and likely contained other pests that we have not had to deal with and were not found across Texas. Be on the lookout and control these enemies when they are few in number and small in stature. Remember what Winston Churchill said during WWII, **"We shall defend our island, whatever the cost may be, we shall fight on the beaches, we shall fight on the landing grounds, we shall fight in the fields and in the streets, we shall fight in the hills; we shall never surrender"**. We must continue to fight, never giving up. It is a good fight, keep up the good work.

UPCOMING CALENDAR OF EVENTS

- May 1, **Riparian Workshop—Burnet –Bell County area**, Classroom begins at 9:00 am with field from 12:30-3:30 PM. Workshop sponsored by the Lampasas River Watershed Partnership. Please Lisa Precin at (254) 774-6008, or e-mail at lprecin@brc.tamus.edu for more information.
- May 4, **Wildflower Workshop-Panhandle Native Plants, Weeds or Wildflowers**. Hours for the workshop are 8:30 AM-5:00 PM at the Mack Dick Group Pavilion in Palo Duro Canyon State Park, Canyon, Texas. Speakers include Burr Williams, formerly with the Sibley Nature Center and J.R. Bell, retired NRCS specialist, and they will present discussions about various aspects of native plants. Registration fee deadline is April 15 and includes a catered lunch. Please contact Joanne Toler at (806) 220-9005/(806) 356-9540, or online at www.npsot.org/amarillo for more information.

Redbuds: A Heritage of Beauty

Story by Wynne Whitworth
NRCS Rangeland Mgmt. Specialist
Jacksboro, Texas

What do Indiangrass and a redbud tree (*Cercis Canadensis var. texensis*) have in common? They are state symbols of our neighbor to the north, Oklahoma. Just as Texas prides itself on its native pecan tree and sideoats grama, Oklahoma also displays its love of natural heritage by having these living badges showing their state pride.

Both the Eastern redbud and the Texas redbud are natural choices when it comes to intimating beauty and perseverance on the rugged landscapes found in Texas and Oklahoma. These hearty trees can be found in very rocky shallow soils as well as deeper ground. These trees are a favorite with landscapers as they require very little maintenance. Growing up in the Hill Country, seeing the redbuds bloom up and down the otherwise desolate limestone hillsides was a sure sign of spring. Redbuds bloom before anything else leafs out and put on quite a show.

Redbuds remain small, maturing at 20 to 30 feet in height and 15 to 35 feet in width. They generally grow as a small tree with a divided trunk close to the ground. Redbuds growing in the full sun will be compact and rounded; when grown in shade, their form is loose, open and tall. The leaves of the redbud tree have a very characteristic heart shape. They are thick and smooth to the touch and will emerge after the tree has blossomed. There are several differences in the Texas and Eastern varieties. The Texas variety exhibits, thicker, tougher leaves as well as darker pink flowers than the Eastern redbud. Redbud trees reproduce by seeds, and are members of the Fabaceae, or legume family so they produce seed pods. These pods will darken as they mature and eventually fall off the tree.

Redbuds offer some wildlife benefits to many bird species foraging on the seeds. However, it offers little overall benefit to livestock. Native Americans, such as the Lipan Apaches, valued redbuds for their edible blossoms and seed pods. Bark of redbud has been used as an astringent in the treatment of dysentery. Flowers of the tree can be put into salads or fried and eaten.



Photo Credit: Wynne Whitworth, USDA-NRCS



Photo Credit: Ricky Linex, USDA-NRCS



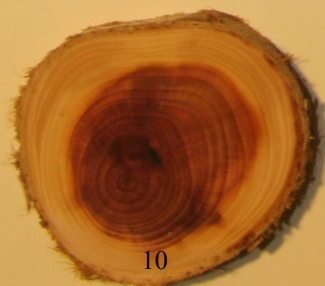
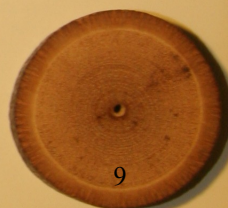
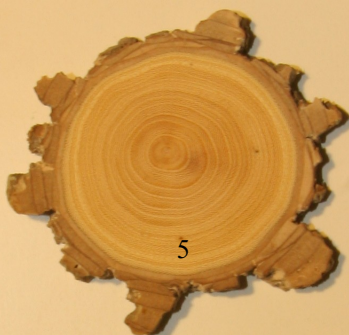
Texas Redbud
(*Cercis Canadensis var. texensis*)

Photo Credit: Ricky Linex, USDA-NRCS

The leaves of the Redbud are heart-shaped, upper left, and the flowers are rose-purple to pinkish, lower left, and pea-like. The Redbuds generally grow as a small tree with a divided trunk close to the ground.

Wooden Nickel Quiz

Identify these wooden nickels cut from trees and shrubs commonly found in the Blackland Prairie and Post Oak Savannah region. Thanks to Steve Nelle for supplying these nickels and to Roger Q. "Jake" Landers for initiating the idea of the nickels. The answers to this quiz can be found on page 6 in this issue.



(Continued on page 6)

The Dimensions of Drought

*Story by Steve Nelle
Retired NRCS Wildlife Biologist
San Angelo, Texas*

Drought is perhaps the most dreaded of natural calamities, especially for agricultural people. Other disasters, such as tornados, severe hailstorms or floods are also devastating, but they happen quickly and are over with. Drought persists; and the effects of drought worsen and are compounded over time. Drought affects farmers, ranchers and landowners in three important ways: ecological damage, economic damage, and emotional damage. Each of these is debilitating by themselves, but when all three are combined together, the net effect can be nearly unbearable.

The ecological damage of severe drought has immediate as well as lasting effects. Short-term effects include loss of photosynthetic capacity, which in turn damages the root system, reduces leaf production, flowering and seed production. When drought persists, some plants die. This is what happened on a very large scale during 2011. A great deal of perennial grass died as well as many different kinds of trees. When grass dies, important ecological processes are interrupted. Soil cover is reduced and soil becomes vulnerable to wind and water erosion. With a reduced cover, runoff increases and infiltration decreases. The land repels water rather than holding water, further exacerbating the effect of drought. In some cases, plant succession must start all over again, and it may take decades for drought stricken land to recover to pre-drought conditions.

The economic damage of drought can also be incapacitating for agricultural families. Without an outside source of income or a cash reserve, long-term drought can be ruinous. Those who try to hang on to genetically valuable livestock which they have worked for generations to develop face greatly increased costs of hay and supplement, or must try to find over-priced pasturage elsewhere. Those who try to feed their way through a drought find out afterwards that it seldom works. Those who are forced to sell out completely end up with a bag of cash, but no productivity and the harsh realization that buying back at the end of the drought will cost more than they received. Those who wait too long to reduce or liquidate their herds are faced not only with the loss of livestock, but added damage to the range and a slower recovery.

(Continued on page 10)



These two photos were taken in the Rolling Plains of North Texas. The left photo was shot Sept. 21, 2011, while the right photo was taken on Nov. 13, 2012. The reduction of stocking rates, rest from grazing and time were needed to protect the soil, restore the water cycle, and begin healing the land. At times, re-seeding will also be needed to restore desirable plant communities in the aftermath for long-term overgrazing and drought. (Photos courtesy of Ricky Linex, USDA-NRCS)

Handling and Storage of Seed

Story by Brandon Carr, NRCS Soil Conservationist

James E. "Bud" Smith Plant Materials Center

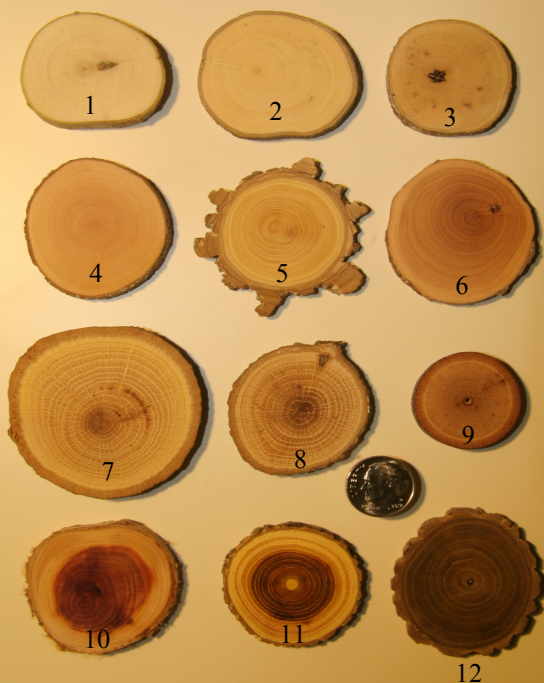
Knox City, Texas

Anyone can collect and store seed without an expensive storage facility. Proper seed collection and storage is the key to ensure viable seed in the future. The length of time seed can be stored depends on several factors such as the type of species being stored, environmental conditions which the seed was produced, collection and preparation, and storage. With a little preparation, some seed has the ability to last several years.

The first step is seed collection. Mature seed should be harvested from the plants before it shatters and is exposed to weather. Researching specific species will provide an understanding of seed maturation and growth, along with the identification of the plants. Several trips to a collection site may be necessary in order to obtain enough seed for the collection. Temperature and precipitation will influence seed maturity as well. Extreme heat and dry conditions may cause plants to produce seed earlier than a wet cool season. Collect a good representative sample of seed from a population, but avoid gathering all the seed. Some seed should be left so that the population can reseed itself. Mature seed is usually dark in color, firm and dry. Immature seed is often green, soft and moist and will not normally germinate. Seed should be kept in a paper bag or envelope. Never store seed in a plastic bag or air tight container. The moisture trapped will cause the seed to mold and ruin the sample. The bag should always be kept in a dry place.

(Continued on page 7)

Wooden Nickel Quiz—how well did you know your trees and shrubs in the Blackland Prairie and Post Oak Savannah region?



How Did You Score?

1. Possumhaw
2. Elbow bush
3. Yaupon
4. Farkleberry
5. Winged elm
6. Hawthorn
7. Water oak
8. Willow oak
9. Alabama supplejack
10. Eastern red cedar
11. Osage orange
12. Common persimmon

Keep reading The Reverchon Naturalist for more quizzes to help sharpen your identification skills throughout the many regions of North-Central Texas. (Photos courtesy of Ricky Linex, USDA-NRCS)

(Continued from page 6— Handling and Storage of Seed)

Once the collection is finished, it needs to be processed for storage. The first step is to dry the seed. The collection can be laid out on a table and air dried for one to three days depending on the humidity. Leaves, stems and any other trash should be removed from the collection. This will help the seed dry quicker and reduce the volume of seed being stored. Clean samples will also reduce the chance of damage to the seed by disease and insects. Insects can damage seed before or during storage. Dusting with a mild insecticide can eliminate insects before seed storage. Another method is to place the seed in a freezer for a brief period. Seed should be left long enough to kill live insects as well as any eggs that may be deposited on the sample.



This photo illustrates various types of seed that has been collected, cleaned and stored properly. (Photo Credit: Brandon Carr, USDA-NRCS)

The final step is the actual storage of the seed collection. Proper storage is essential to maintaining viability of the seed. The most critical step is keeping the seed at a constant temperature and humidity. The ideal storage condition is a temperature below 50 degrees Fahrenheit and less than 50 percent humidity.

There are many different storage containers that can be used for storing seed with each one having advantages and disadvantages. A paper bag or envelope works well for seed that will be stored for a short time. Place bag in a refrigerator or cool, dry area with a small amount of desiccant such as silica gel. This will keep the seed dry and cool until it is ready to be planted. The disadvantage with using paper containers is that humidity changes from circulating air that can eventually damage the seed. Another example is a sealed container.

Some common items are used such as baby food jars, canning jars, zip-lock storage bags, or plastic containers with snap-on lids. These containers prevent circulating air from entering the container. A small amount of desiccant should also be added to these containers to prevent moisture. These containers can provide longer storage by preventing humidity changes in the seed. The main disadvantage to these containers is that seed is not completely dried before sealing and moisture trapped inside the container ruins the seed. Seed dried at 100 degrees F for six hours will bring the moisture level down to 8 percent which will increase the storage life. The collected seed should also be labeled with basic information such as species name, date collected, and location of the collection.

Following these simple steps will increase the chance of a successful planting when seed is used. Even with good seed collection, processing, and storage, some seed has a short longevity. Other species can survive several years in storage.

Cowpen Daisy (*Verbesina encelioides*)

Story by Znobla Wootan
Native American Seed Company
Junction, Texas

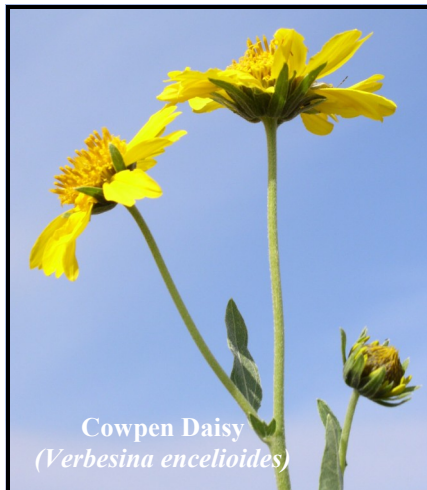
There are a few native wildflower species that you can count on every year. The beautiful Gay-feather, vibrant Maximilian sunflower, and the White frostweed that often goes unnoticed growing in the shade but you can't miss Cowpen daisy, *Verbesina encelioides*. It is also frequently called Golden crownbeard.

Like the other fall blooming species mentioned above, it is very resistant to browsing/grazing pressure. It actually contains the chemical galegine and is poisonous to animals like sheep and goats, although they won't eat it unless there is nothing else available. The Native Americans used Cowpen daisy to treat some skin ailments and spider bites. It could be widely found throughout the prairie states, and is an annual forb of about 1-3 feet tall that likes to grow in disturbed sites, hence the name.

Cowpen daisy is a favorite to many because of the time of year that it blooms, summer to first frost. It is one of the easiest yellow composite flowers to identify, for the gray green foliage and its unique odor are dead giveaways. The leaves are usually triangular shaped and have toothed margins. They will be opposite of each other on the lower part of the plant becoming alternate to each other higher up, and get their gray green appearance from the covering of very fine white hairs. Where there is one plant you will find more as they like to grow in groups, and are even referred to as weedy by those that are less appreciative. This makes for beautiful sweeping lines of yellow during the hottest driest times in Texas.

Some people will smile, pause for a moment, and wonder at the grit this yellow flower must have to thrive in August and the Texas heat. The flower heads are up to 2 inches across and have distinct 3-toothed rays. Our native pollinators love the blooming colonies of Cowpen daisy that provide an exceptional nectar source at a time of the year when the nectar supply can be kind of scarce. Our long-tongued bees such as bumblebees, honeybees, large leaf-cutting bees, little carpenter bees & cuckoo bees find Cowpen daisy too good to pass up. Butterflies also take advantage of this bountiful nectar supply, and Cowpen daisy is actually a host plant for the caterpillars of the Silvery Checkerspot and the Gold Moth. Once the pollinators visit and the seeds mature our native quail, dove and turkey have a feast on the crop of seeds that fall to the ground. Everyone is a winner with this beautiful native.

(Photos courtesy of Native American Seed Company and Rick Linex)



Cowpen Daisy
(*Verbesina encelioides*)



Photo Credit: Ricky Linex,
USDA-NRCS

Cowpen Daisy, also called Golden Crownbeard, is an easy yellow composite flower to identify with gray-green foliage, along with very fine white hairs on the stem.



Tifton 85 Bermudagrass:

The Good, The Bad and The Bottom Dollar

*Story by Chad Hajda
NRCS Soil Conservation Technician
Cameron, Texas*

The Good

Tifton 85 is a hybrid bermudagrass variety that originated from the USDA-Agricultural Research Service station of Tifton, Georgia in 1992. There are several positive attributes of this grass to take into consideration. It is a very hearty bermudagrass that once established can grow late into the fall of the year with adequate moisture available. Compared to its counterparts, Tifton 85 is higher yielding and contains higher nutritional levels within its forage. Those results may be identified from tissue and forage samples taken and sent to a plant analysis lab. Livestock that graze or consume Tifton 85 hay normally do not require as much supplemental protein as sometimes needed with other types of bermudagrass hybrids. Besides yielding higher quality forage, the quantity produced by Tifton 85 can regularly outperform other types of hybrid bermudagrasses. Plus, Tifton 85 can establish itself quickly when adequate growing conditions take place. The above-ground runners of this grass can reach up to twenty feet in length during one growing season. The faster a stand of grass is established, the less potential there is for soil erosion on that field.

The Bad

Although Tifton 85 provides high nutritious forage for livestock, its nutrient uptake is also greater. After the first few years following establishment, a producer may notice a drop in forage production, especially if fertilizer application has not been adjusted accordingly to what forage has been grazed and/or harvested. This problem should be noticed less in pastures than hayfields. In pastures, cattle recycle nutrients from the grass back to the soil after digestion by depositing manure and urine. In a hayfield, any nutrients harvested and removed with the hay must be replenished by another means. Remember, higher-yielding production and higher levels nutrition in the forage means more fertilization and plant available nutrients are needed.

This does not mean to over-apply fertilizer, but to follow soil test recommendations. A timely soil test of the Tifton 85 field would give the producer a snapshot of what nutrients are available for plant uptake, as well as provide fertilization recommendations needed for maximum yield and quality of the forage production.

When sprigging Tifton 85, the quality of sprigs and the planting depth are two major factors to take into consideration. First, quality sprigs must include green buds or evidence of green leaves that have already emerged. Care must be taken to have partial exposure of sprigs to sunlight when planted. Viable Tifton 85 plants must be planted closer to the soil surface with part of the sprig exposed, unlike coastal bermudagrass that can be buried and months later emerge from the ground.

(Continued on page 10)



Tifton 85 bermudagrass sprig about five weeks after being planted. (Photo Credit: Chad Hajda, USDA-NRCS)

(Continued from page 9— Tifton 85 Bermudagrass)

Timing is critical when harvesting Tifton 85 for hay. The stems can become very coarse, or what ranchers call “rank,” if the grass is not cut at the right stage in its life cycle. Tifton 85 hay may have a high nutritional value in this condition, but it has low palatability. Livestock may waste or become very selective if the hay is not harvested properly.

If Tifton 85 is utilized for livestock grazing, care must be taken not to overgraze the stand. This grass does not recover as well as coastal bermudagrass or common bermudagrass when heavy grazing pressure is applied. Rotational grazing and maintaining a minimum of four inch standing forage at all times is the preferred utilization of Tifton 85. In return, water retention will increase while soil erosion decreases.

The Bottom Dollar

Tifton 85 can be an excellent introduced grass species to plant if highly productive and nutritional forage are desired on pastureland and for livestock. With the continuing rising costs of inorganic and petroleum based fertilizers, a major decision must be made if Tifton 85 bermudagrass is the correct choice of warm season perennial grasses to plant. Nutrient-building cover crops such as winter peas, clovers, and vetch are alternatives to consider in place of those fertilizers. Cover crops can also help develop soil health during dormant months. Producers must always keep in mind that if forage is removed, the nutrients are also harvested. In the end, replenishing those nutrients may cost more than the value of the forage produced.

(Continued from page 5— The Dimensions of Drought)

The ecological and economic effects of drought are bad enough, but the effects on human emotions can be equally damaging. The strain, anxiety and despair precipitated by drought are not easy for outsiders to see. Farm and ranch families are stoic; toughened by nature, they don't readily show their emotions. But the pain, the heartache and the damage are just as real as the ecological and economic damage.



The good news is that nature is resilient. Healthy land is more resilient than unhealthy land, so ranchers can use this truth to help endure drought. By keeping a cover of grass, and reducing stock number before the grass is all gone, ranchers can usually maintain their base of production and a functional water cycle. Just like nature, farm and ranch families are also remarkable in their ability to endure, persist and wait for better times.

Those of us working with natural resources tend to deal mostly with the ecological aspects of drought, but we need to be equally aware of and sensitive to the economic and emotional dimensions of drought. Put yourself in their shoes.

USDA is an equal opportunity provider and employer.